Amendment of the Specification

Kindly amend the substitute specification submitted June 25, 2004 as follows:

1. By amending the paragraph at page 26, lines 1-19 as follows:

Appliance 1 includes an oven cavity 2 generally defined by, FIG. 2, a top wall 3, a bottom wall 4, a left side wall 5, a right side wall 6, and FIG. 4, a back wall 94 and a front wall 95. Oven cavity 2 also has associated therewith an access opening 7, FIG 4, through which food items 10 may be placed within a cooking chamber 102a of the oven cavity 2 upon cooking rack 8a, FIG 2. Although the exemplary embodiment is shown as a countertop oven with one rack 8a, supported by side walls 5 and 6, it is obvious to one skilled in the art that the oven may be made with multiple racks and multiple gas delivery systems, and is not limited to a single rack design. As used herein, the term "gas" refers to any fluid mixture, including air and nitrogen that may be used in cooking processes and applicant intends to encompass within the language any structure presently existing or developed in the future that performs the same function. Although the cooking rack 8a is shown as supported by side walls 5 and 6, it is obvious to one skilled in the cooking art that rack 8a may be a free-standing cooking rack not supported by the side walls. Cooking appliance 1 has a hinged door 9, FIG. 4, pivotally attached to the oven front for closing the cooking section opening 7 during cooking operation. Hinged door 9 may be swung between an open position wherein the door allows access to oven cavity 2 and a closed positioned wherein the

door covers the opening into oven cavity 2. Although illustrated as a hinged door pivotally attached at the left side of the front of the oven, the door may be hinged on the right side, bottom side or top side.

2. By amending the paragraph at page 27, line 14 through page 30, line 5 as follows:

Referring to FIG. 4, gas is transferred to and from oven cavity 2 via a left gas transfer system, which is comprised of a left gas transfer section 15a, which extends from the front to back of oven top wall 3, along the left side of top wall 3. In fluid connection with left gas transfer section 15a is top gas egress opening 12, which is open to, and in fluid connection with oven cavity 2 through top wall 3. Top gas egress opening 12 is substantially rectangular, although other geometries may be employed, and is centrally located within oven top wall 3 and provides for the passage of gas from oven cavity 2 into left gas transfer section 15a, as gases are removed from oven cavity 2 through top ~~egress~~ gas egress opening 12. Located within left gas transfer section 15a is left grease extractor 13a. As gas is drawn through top gas egress opening 12, the gas passes across left heating means 14a, prior to entry in and through left grease extractor 13a. Heating means 14a may include direct fired thermal energy, indirect fired thermal energy, propane, natural gas, electric resistance heating elements, and other thermal means; and applicant intends to encompass within the language any structure presently existing or developed in the future that performs the same function. After the gas is drawn across

heating means 14a and through left grease extractor 13a, it is then drawn through left odor filter 40a and into left gas transfer section 15a. Alternate locations for left odor filter 40a can be utilized within the gas flow path and the location of the left odor filter adjacent to left grease extractor 13a is not required. In fluid connection with, and located within left gas transfer section 15a is a left gas accelerator, illustrated as left blower wheel 16a. Other devices may be utilized to accelerate the gas flow, such as a compressor, and applicant intends to encompass within the language any structure presently existing or developed in the future that performs the same function as 16a, 90a, 91a and 16b, 90b and 91b, to be discussed further herein. Connected to left blower wheel 16a is blower motor shaft 90a, which is direct drive with electric motor 91a. Other means may be employed for coupling blower wheel 16a to electric motor 91a, such as belt drive and the means is not limited to direct drive. Blower wheel 16a takes gas from oven cavity 2 and delivers the gas via gas transfer section 17a to the left top side of oven cavity 2. Top left gas transfer section 17a, FIG 2, is in fluid connection with a lower left gas transfer section 18a via a left vertical gas transfer section 19a. Left vertical gas transfer section 19a is bounded by left side wall 5 and a left microwave waveguide section 20a. As can be seen in FIG. 2, as gas is pumped into top left gas transfer section 17a, the gas is discharged through ~~a top~~an upper left discharge plate 23a at a downward angle into cooking chamber 102a of oven cavity 2 via apertures 100a and onto the left top and side portion of food product 10. Upper left discharge plate 23a is connected (see FIG. 2) at its lower end to the

left waveguide section 20a and extends at an angle up from waveguide section 20a at a left side of the cooking chamber 102a for connection at its upper end to a top wall 103a of the cooking chamber. Apertures 100a may be slotted, regularly formed or irregularly formed apertures and are illustrated herein as nozzles 100a and 29a and applicant intends to encompass within the language any structure presently existing or developed in the future that performs the same function as 100a, 29a and 100b and 29b, discussed further herein. Gas that has not been discharged through top left gas discharge plate 23a flows to lower left gas transfer section 18a via vertical transfer section 19a. Gas that is distributed to lower left gas transfer section 18a may be re-heated, if desired, by a lower left heating means 103a, shown in FIG. 2, before said gas passes through slotted or perforated lower left gas discharge plate 27a via apertures 29a, for discharge at an upward angle onto the left bottom and left side portions of food product 10 in cooking chamber 102a of oven cavity 2. Lower left discharge plate 27a is connected (see FIG. 2) at its upper end to left waveguide section 20a and extends at an angle down from waveguide section 20a at a left side of the cooking chamber 102a for connection at its lower end to a bottom wall 104a of the cooking chamber. Lower left heating means 103a may be present in some embodiments and not present in others depending upon the particular requirements for the speed cook oven. Apertures 100a and 29a are sized for a low pressure drop, while providing and maintaining sufficient gas velocities in the range of approximately 2000 ft/minute to approximately 6000 ft/minute to properly cook the food product as described

herein. In some instances, velocities below 2000 ft/minute and above 6000 ft/minute may also be utilized. As shown in FIG. 6, apertures 100a are sized such that the majority of the gas is supplied from the top left gas discharge plate 23a. The resulting imbalance of gas flows between the top left gas discharge plate 23a and lower left gas discharge plate 27a is desirable because the top flows must aggressively remove moisture produced and escaping from the top and top side surface of the food product 10. The imbalance also serves to heat, brown and/or heat and brown the food product 10.

3. By amending the paragraph at page 30, line 6 through page 32, line 13 as follows:

Referring again FIG. 4, gas is also transferred to and from oven cavity 2 via a right gas transfer system, which is comprised of a right gas transfer section 15b, which extends from the front to back of oven top wall 3, along the right side of top wall 3. In fluid connection with right gas transfer section 15b is top gas egress opening 12, which is open to, and in fluid connection with oven cavity 2 through top wall 3. Top gas egress opening 12 is substantially rectangular, although other geometries may be employed, and is centrally located within oven top wall 3 and provides for the passage of gas from oven cavity 2 into right gas transfer section 15b, as gases are removed from oven cavity 2 through top ~~egress~~ gas egress opening 12. Located within right gas transfer section 15b is right grease extractor 13b. As gas is drawn through top gas egress opening 12, the gas passes across heating means 14b, prior to entry

in and through right grease extractor 13b. After the gas is drawn across heating means 14b and through right grease extractor 13b, it is then drawn through right odor filter 40b and into right gas transfer section 15b. Alternate locations for right odor filters 40a, 40b can be utilized within the gas flow path and the location of the right odor filter adjacent to right grease extractor 13b is not required. In fluid connection with, and located within right gas transfer section 15b is a right gas accelerator, illustrated as right blower wheel 16b. Connected to right blower wheel 16b is blower motor shaft 90b, which is direct drive with electric motor 91b. Other means may be employed for coupling blower wheel 16b to electric motor 91b, such as belt drive and the means is not limited to direct drive. Blower wheel 16b takes gas from oven cavity 2 and delivers the gas via gas transfer section 17b to the right top side of oven cavity 2. Although illustrated as a conventional blower motor, blower motor shaft and blower wheel, other gas pumping means such as a compressor may be utilized to re-circulate gas to and from oven cavity 2 and the invention is not limited to use of a blower motor and blower wheel combination. Top right gas transfer section 17b is in fluid connection with a lower right gas transfer section 18b via a right vertical gas transfer section 19b. Right vertical transfer section 19b is bounded by right side wall 6 and a right microwave waveguide section 20b. As can be seen in FIG. 2, as gas is pumped into top right gas transfer section 17b, the gas is discharged through ~~a top~~an upper right discharge plate 23b at a downward angle into cooking chamber 102a of oven cavity 2 via apertures 100b and onto the right top and side portion of food

product 10. Apertures 100b may be slotted, regularly formed or irregularly formed apertures and are illustrated herein as nozzles 100b and 29b. Upper right discharge plate 23b is connected (see FIG. 2) at its lower end to right waveguide section 20b and extends at an angle up from waveguide section 20b at a right side of the cooking chamber 102a for connection at its upper end to the top wall 103a of the cooking chamber. Gas that has not been discharged through top right gas discharge plate 23b flows to lower right gas transfer section 18b via vertical transfer section 19b. Gas that is distributed to lower right gas transfer section 18b may be re-heated, if desired, by a lower right heating means 103b, shown in FIG. 2, before said gas passes through slotted or perforated lower right gas discharge plate 27b via apertures 29b, for discharge at an upward angle onto the right bottom and right side portions of food product 10 in cooking chamber 102a of oven cavity 2. Lower right heating means 103b may be present in some embodiments and not present in others depending upon the particular requirements for the speed cook oven. Apertures 100b and 29b are sized for a low pressure drop, while providing and maintaining sufficient gas velocities in the range of approximately 2000 ft/minute to approximately 6000 ft/minute but as discussed with the left side gas delivery system, velocities below 2000 ft/minute and above 6000 ft/minute may be utilized if desired to properly cook the food product as described herein. As shown in FIG. 6, apertures 100b are sized such that the majority of the gas is supplied from the top right gas discharge plate 23b. The resulting imbalance of gas flows between the top right gas discharge plate 23b and

lower right gas discharge plate 27b is desirable because the top flows must aggressively remove moisture produced and escaping from the top and top side surface of the food product 10. The imbalance also serves to heat, brown and/or heat and brown the food product 10.

4. By amending the paragraph at page 32, line 18 through page 34, line 14 as follows:

As described, the gas flow is delivered via four gas transfer sections 17a, 17b, 18a, 18b which are located in the top and bottom corners of oven cavity 2 as shown in FIG. 2. Gas flow transfer sections 17a, 17b, 18a and 18b extend from the back wall 94 of oven cavity 2 to the front wall 95 of oven cavity 2, although it is not required that the gas flow transfer sections extend the entire depth (front to back) of the oven cavity. Gas transfer section 17a is located in the top left corner of oven cavity 2 where top wall 3 intersects oven cavity side wall 5; gas transfer section 17b in the top right corner where top wall 3 intersects right side wall 6; gas transfer section 18a in the lower left corner of the oven cavity where bottom wall 4 intersects left side wall 5; and gas transfer section 18b in the lower right corner where bottom wall 4 intersects right side wall 6. Each of the gas transfer sections are sized and configured to deliver the appropriate gas flow for the particular oven utilized. For example, in a smaller oven, the gas delivery sections, indeed the entire oven, may be sized smaller in proportion to the smaller footprint of the particular requirements, and a larger oven will have proportionally larger gas

delivery sections. As seen in FIG. 6, the left side and the right side gas flows 30a and 30b (FIG. 6a) are directed in downwardly convergent directions and converge on the food product 10 thereby creating an aggressive flow field on the food product upper surface that strips away the moisture boundary layer. This turbulently mixed gas flow directed at the food product can best be described as glancing, conflicting and colliding gas flow patterns that spatially average the gas flow over the surface area of the food product producing high heat transfer and moisture removal rates at the food surface, thereby optimizing speed cooking. The gas flow is directed towards the top, the bottom and the sides of the food product from the left and right sides of the oven cavity and the left and right side gas flows conflict, collide and glance off each other at the food product surface before exiting the oven cavity through top gas egress opening. As used herein the term "mixing" refers to the glancing, conflicting and colliding gas flow patterns that meet at and upon the top surface, the bottom surface and the left and right side surfaces of the food product and produce high heat transfer and speed cooking of the food product due to spatial averaging of the gas flow heat transfer. As used herein, the terms "mix", "mixing", "turbulent mix" and "turbulent mixing". The oven of the present invention does not requires smooth gas flow, laminar gas flow or air wrap gas flow. The mixing gas flows patterns are created within the oven cavity and, when appropriately directed and deflected, produce a high quality cooked food product very quickly. Enhancing the highly agitated, glancing, conflicting, and colliding gas flow of the present invention is the general

upward flow path the gas will follow, as shown in FIG 6a and 6b, through top gas egress opening 12, as the gas exits the top of oven cavity 2. This upward gas flow draws also the gas from lower gas discharge sections 18a and 18b thereby scrubbing the bottom of the food product, pot, pan or other cooking vessel, by pulling gas glow around the sides of said vessel, further enhancing the heat transfer, as well as drawing the gas that scrubs the upper surface up towards the oven cavity top wall. As illustrated in FIG. 6A, gas flows 32a and 32b from respective lower left and right gas discharge plate apertures 29a and 29b are directed in upwardly convergent directions into cooking chamber 102a and collide upon the lower surface of food product 10 where the gas turbulently mixes, causing high heat transfer and rapid cooking of the food product. As shown, the oven has no means for directing gas vertically into the cooking chamber 102a.